The Ole Miss Engineer

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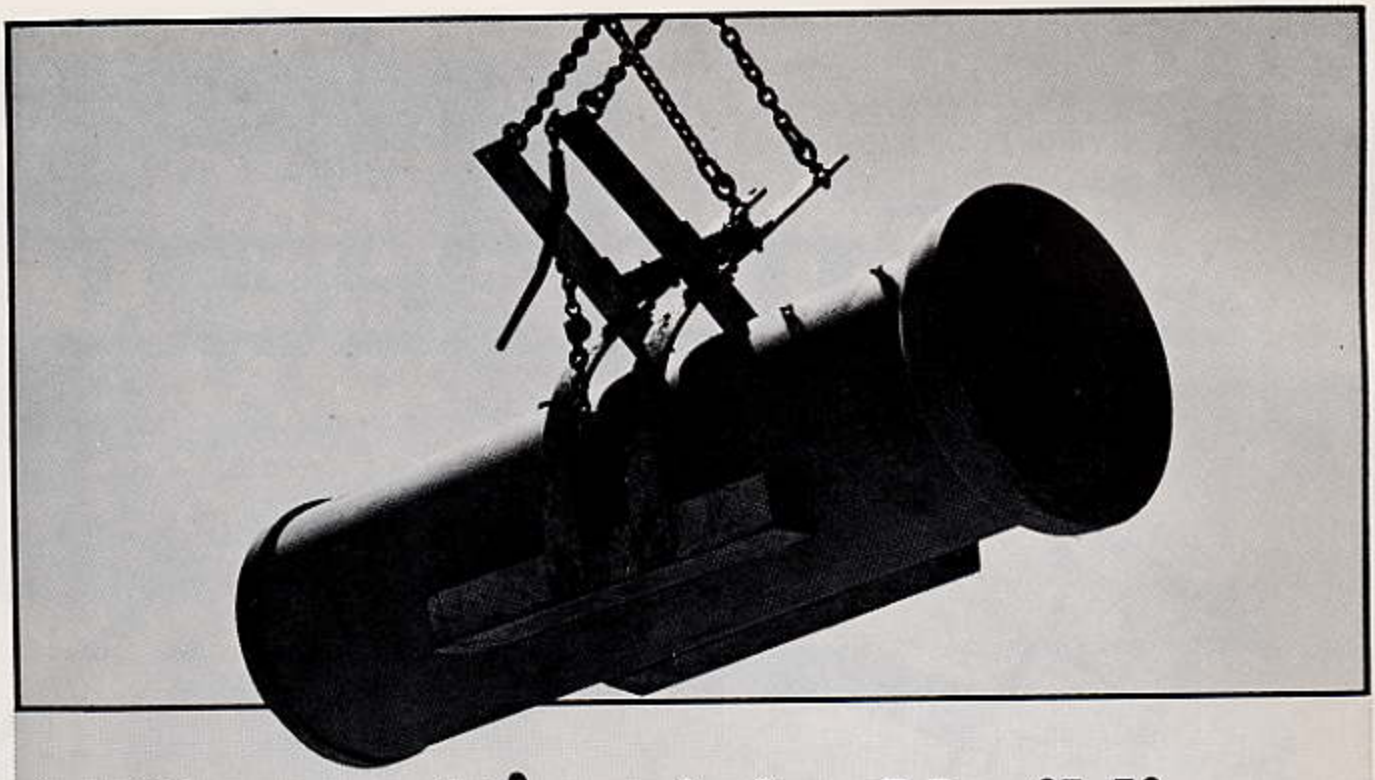

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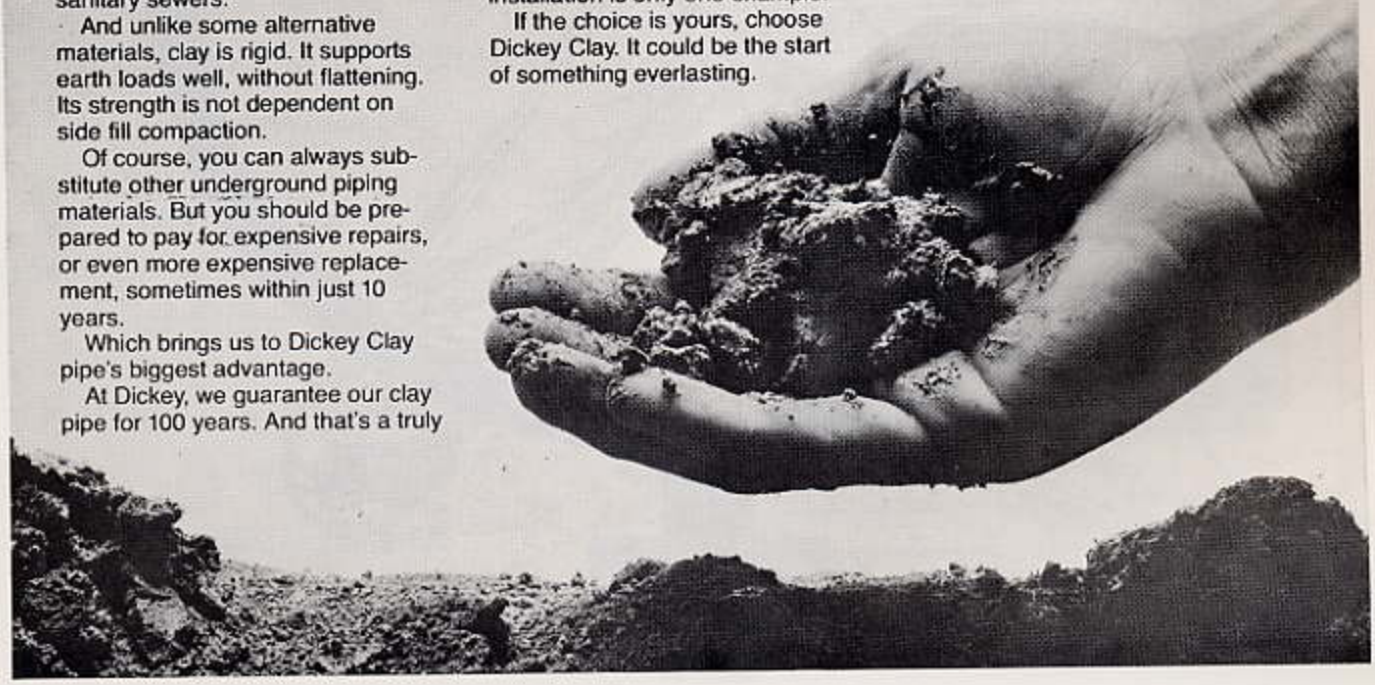

ole miss Engineer

Volume 20, No. 1 October, 1979

ABOUT THE COVER

Each year colleges and universities are admitting an increasing number of women students. Ole Miss's Engineering School now has a 14 percent enrollment of the "fairer" sex, and these young ladies are discovering the fascination and excitement of the engineering fields.

This issue of the **Ole Miss Engineer** is dedicated to those young women who have decided to buck tradition and enter the world of the engineer. And for those who complete the curriculum, an abundance of employment opportunities awaits them. Whether civil, mechanical, chemical, geological, electrical, or computer science is the area of specialty they choose, female engineers with an appetite for science and mathematics will attain success and entertain a rewarding, satisfying career.

The cover representation of the lady engineer is the concept of a freshman chemical engineering major, Beth Watson. Ms. Watson chose the crossed hammer and test tube intersecting the symbol for female to show that women can be an integral part of engineering.

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The Dean's Page

Guest Editorial - Dr. David W. Arnold, President Engineering Alumni Chapter

This is normally the "Dean's Page," and Dean Brenkert's comments here have been most informative. His positive outlook and his desire for excellence in engineering education have been apparent in his writing as well as in his work. I look forward to his return to our faculty next year. However, in the absence of a Dean I appreciate this opportunity to offer some personal opinions on engineering education.

An engineering education can lead a person into many different types of jobs in private industry, government or teaching. The question of what an engineering curriculum should encompass to prepare the engineering student for this diversity of career choice is a challenging one. Much has been written about the technical side of this question. Let us look briefly at the personal side of the issue — the basic personal qualities that any engineering student should develop or strengthen. Based upon my observations in industry, the most important are: a willingness to work, the capacity for learning, the ability to work with others, communication skills, and integrity.

That an engineer has to be willing to work must seem obvious to any student of the discipline. That he has to be capable of learning must appear equally clear. Do not be deceived, however, that an engineer's education is complete when he receives his degree. In a world in which technology is expanding at an astronomical rate, a university degree provides only the tools for continued education. The engineer who ceases to expand his knowledge is soon obsolete and unable to make a significant contribution on the job. Thus, the engineer's workload remains heavy throughout his career — a combination of work and self-education.

The ability to work with others and to communicate ideas clearly and concisely to other people has become increasingly important in the complex world in which we live. Understanding the other person's point of view and responding to it is the key to working successfully with others. Teamwork is required for the achievement of most engineering goals and no technological advancement, however outstanding, is of great value if it is not shared with someone who will utilize it. Describing engineering information in terms that a nontechnical person can understand is always a challenge. The ability to listen to input from nontechnical people and to apply this information to engineering work is usually an even greater challenge. While communication, both oral and written, is important, writing is more frequently the engineer's downfall.

Finally, let me emphasize the importance of integrity, the firm adherence to a code of moral values. An engineer's employer and his fellow employees must come to rely upon him, upon his work, and on his word if he is to be successful. That trust can be based only upon a clear commitment to honesty. For example, admitting a technical error and setting about correcting it may cause temporary embarrassment, but attempting to hide the error or shift the responsibility for it creates distrust that is difficult to overcome. Though great personal courage will be required at times to maintain one's honesty and integrity, the results are worth it.

I urge you to concentrate upon building these five attributes as you continue your education, for strength in these areas will increase the probability of success in your career. There is no finer place to begin that quest for success than at Ole Miss! Ole Miss creates a unique educational opportunity for the engineering student — a strong engineering education together with exposure to the cultural achievements of mankind. These are important years for you. Use them wisely. Seek an education, not just in the technical aspects of your field, but in the development of the whole person.

Does assuming a corporate identity mean losing your own?

Some corporations encourage individuality. And some don't.

Finding the right company can be hard work. It entails a lot of research on your part.

The best research you can do is to learn everything you can from your interview. Ask probing, well-thought-out questions; not to impress the interviewer, but to help you get information.

Here are a few suggestions:

• Would I really have any influence in a big company on the quality of services and products? How? Give me examples of how individuals have made a difference.

• What are internal communications like? Will my supervisor and management listen to me? Will they react to my suggestions and ideas? Can you give me examples?

• What about "red tape"? Are there endless levels of approval before ideas get implemented?

• What are the people that I'll be working with like? Where do they come from? What are they interested in?

These questions are only meant as a starting point. Add and subtract from this list. Fine-tune it to your own specific needs.

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Engineering School Welcomes First Lady Professor

by Lisa Bone
Civil Engineering

A young instructor from Ohio has recently accepted a position in the geological engineering department. As an assistant professor, Dr. Patricia Kelley is the first female faculty member in the School of Engineering.

Dr. Kelley, originally from Cleveland, is introducing freshmen to the field while teaching physical and historical geology. She also instructs students in advanced paleontology.

Earning her Doctorate degree at Harvard University, Dr. Kelley graduated last June and specialized in paleontology. She received her Master's degree from Harvard in 1977 and her Bachelor of Science degree from the College of Wooster in Wooster, Ohio, in 1975.

"I believe I was only the second or third woman to receive a degree in paleontology from Harvard," Dr. Kelley commented.

Academic honors Dr. Kelley has received include class salutatorian, Phi Beta Kappa in her junior year in college, election to Sigma Xi, the Karl Ver Steeg award and the McDowell award for excellence in geology. She belongs to several professional organizations: The Geological Society of America; the Paleontological Society; Sigma Xi, The Scientific Research Society of North America; and the American Association for the Advancement of Science.

How did a young lady become interested in the field of geology? "When I was seven years old, I fell in love with dinosaurs," explained Dr. Kelley. "I found a book at the Cleveland Public Library Book Fair. I was there because my father is a librarian."

She added, "After I got the book, I harbored an interest for collecting rocks and fossils."

Not intending to go into geology when she went to college, Dr. Kelley took a heavy load of mathematics and sciences at James Ford Rhodes High School in Cleveland. "I started college taking a lot of math, but I had received advanced placement in some math courses, so I took geology courses and headed toward geology — no offense to the mathematicians," the lady professor quipped.

During her years as a student, Dr. Kelley occasionally came across people who felt women did not belong in geology. She expounded, "Women geologists just don't fit into the stereotype when it comes to sitting around the campfire drinking beer and telling dirty jokes. This is when women are not accepted into the traditional model of a geologist."

Once she remembered taking a field trip, and she was the only woman present. "It was something I was not aware of immediately," Dr. Kelley recalled, "but then it hit me that I was the only woman there. Yet I don't think being female in a traditionally male field obstructed my education."

While teaching at New England College in Henniker, New Hampshire, Dr. Kelley finished her dissertation; the project concerned the evolutionary study of Miocene mollusks of the Chesapeake group of Maryland. In her dissertation Dr. Kelley used quantitative techinques to test the recent evolutionary model, which is punctuated equilibria.

Presently, Dr. Kelley teaches mainly undergraduate and graduate geology majors. "It's hard to tell about the reactions of students to a woman geology professor. Women students do not seem to be afraid to approach me and ask for help," pondered the lady geologist. "There seems to be more rapport between women students and women faculty members than between women students and male faculty."

Dr. Kelley further commented, "Some of this understanding of students may be due to my youth. Since I'm just out of school, I seem to have more feeling for what it is like to be a student."

Considering herself a geologist first, Dr. Kelley does not feel she was hired because she is a woman. "I feel I was hired because of my credentials," she said. "It's good to have women instructors in a field that so many women are coming into. Perhaps I can serve as a role model."

Photo by R. Taylor

Jonathan, Dr. Kelley's husband, is the minister of the Bethel Presbyterian Church in Olive Branch, Mississippi where the couple is now living. Dr. Kelley commutes to Ole Miss to teach class three days a week.

"My second occupation is participating in my husband's work at the church and supporting him in whatever he does," commented Dr. Kelley.

"I had never pictured myself moving to Mississippi, but my field is specialized enough so that there were only about two dozen job openings across the country when I was applying," she stated. "Large southern universities seem to be expanding their departments in the area of geology. Ole Miss seemed to be the place for me to develop a paleontology program."

Dr. Kelley added, "I think I'm going to like the south. The people are friendly and have made the move very easy for us. Also the weather has been great so far except for the

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occasional rain."

Another plus for Mississippi in Dr. Kelley's opinion is the geology of the area. "This area is very similar geologically to the area where I did my dissertation," explained the professor. "I can stay in my area of specialty, and there are a lot more fossils here than in New England."

What does a lady Ph.D. do to relax? "I enjoy music. I like to listen to the rock type, but I really like vocal music. I have been active in the choir, and I play the piano, but I've gotten away from it since I've been in college," Dr. Kelley said. "My favorite sports are baseball and boating."

Smith is New Engineering Dean

by June Winstead, CSCI

On October 15, 1979, Dr. Allie Smith became the new Dean of the University of Mississippi School of Engineering. Dr. Smith succeeded Dr. Karl Brenkert, Jr., whose resignation became effective on June 30, 1979. Dr. Brenkert continued to serve as Acting Dean until August 15 when he left to join the faculty of the University of Alabama for a years sabbatical. Mr. Raymond R. Stasiak has served as interim Dean since Dr. Brenkert left in August.

According to Associate Vice Chancellor Dr. Charles E. Noyes, Dr. Smith was recommended for the position by a search committee after consideration of a large field of applicants and interviews with a more limited number of outstanding candidates. After Smith's second visit to the University campus, Chancellor Porter L. Fortune, Jr., accepted the committee's recommendation and offered the position to Dr. Smith.

Smith most recently worked for 12 years with ARO, Inc., contractors for the United States Air Force, in Tullahoma, Tennessee, serving as supervisor of the research section.

Dr. Smith is a graduate of North Carolina State with a B.S. and Ph.D. in Mechanical Engineering. Author of over 100 publications and editor of two books, Smith is especially interested in thermodynamics, heat transfer and fluid sciences.

A member of many technical societies, including AIAA and ASME, Smith has been a professor at North Carolina State and the University of Tennessee. He has also worked as an engineer, manager and research scientist with Bell Telephone Laboratories, Martin Co., and the Research Triangle Institute.

Women in Engineering — Female Viewpoint

by Mary Anna Sellers, Ch.E.

Over the past decade fresh opportunities and goals have appeared for men and women alike. As the choice of a career grows more and more free, perhaps it is time to ask why more women are turning to engineering. The study of engineering is a demanding field and this difficulty, coupled with any extra burdens a woman student might face, makes one wonder why more women choose engineering as their lifework each year.

When asked for her motives in choosing engineering as her major, Beth Watson, a freshman in Chemical Engineering said, "I enjoy math and science and the job market, especially for females, is excellent." These reasons, along with job stability, are repeated time and again by nearly all freshman engineering students surveyed.

One particular problem facing women students is the reaction of the male students to this "invasion" into traditionally masculine territory. When asked if she felt uncomfortable as a woman in a male field, Susan Wilson, a freshman Chemical Engineering major answered, "I was not uncomfortable before I came here, but now I am—mainly because of the surprised reactions I get when I tell people my major." Most women asked agreed with this view. An interesting fact is that none of those surveyed seem to feel that the male students resent their female counterparts. The guys may feel uncomfortable at first, but after they get over the initial uneasiness they find that the girls are capable, and they really do not mind at all.

The students were also asked if they found the coursework difficult. Ann Roy, a freshman Computer Science minor, didn't think they were impossibly hard. She said, "They're very different and this makes them difficult at first, but after you get used to them, they're not so bad." Melanie Malone, a freshman Civil Engineering major, differed with Ann. She answered, "Engineering requires a very rigorous schedule—there isn't much room for non-technical electives." The general feeling, however, was that the hard work required now will pay off. Susan Wilson commented, "Of course it's harder than underwater basket-weaving, but it costs the same amount to study engineering as an easier major and yields a high quality education and good opportunities for the future."

All in all, most women surveyed had very definite reasons for choosing engineering. They feel relatively at ease among the male students and find their classes absorbing. These women are optimistic about their future and are looking forward to the next four years as a challenge. They plan to meet this challenge to the best of their ability.

Women in Engineering — Male Viewpoint

by Don Carr, M. E.

If one were to travel backward to a point in time ten years ago and take a random sampling of the American working-class population, he would be very lucky indeed if he could find more than a few women engineers. At that time, current stereotypes dictated the role of a woman in society; they were supposed to be secretaries if they entered the "world of work;" else they became housewives and devoted the rest of their lives to housework and child-rearing. It was generally considered that this was what they did best; they were seldom given the chance to prove themselves capable of anything else.

The early seventies saw the rise of "Women's Liberation" as a major movement of historical significance. For the first time in history, women were "breaking away" en masse to pursue their own ambitions. The idea of women doing the same work as their male counterparts presented quite an interesting challenge to the notion of "male superiority." Women were "Cropping up" in classes on college campuses where they had never been seen before. Men found themselves competing against women for what were once almost exclusively all-male job openings.

Often this novel concept brought pleasure to an other-wise dull grind; sometimes it presented problems of such magnitude that only a court case could settle. In either case, it is beyond any doubt that, with the passage of time, equality of men and women in fields of work and education has become a well-instituted and accepted fact.

Comments collected in a survey by the **Ole Miss Engineer** concerning the subject of women engineers tend to reflect the same air of acceptance.

Says George McNeer, a sophomore in Electrical Engineer, "I can see absolutely nothing wrong with women in the engineering fields. I'm sure that whether a person is a man or woman has very little to do with how well they are able to do a job in most fields of engineering." "As long as a woman is able to do a job well," he notes, "she should be accepted for that fact and not looked upon simply because she is a woman."

It appears that the general consensus among males is a feeling of acceptance. Most hold that "there is nothing wrong with it (women in engineering)" and many seem to favor the idea.

Timothy Herrington, a sophomore medical student, states that success in any field "should be determined by merit and not by sex."

One sophomore EE major (name

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withheld) did note, however, that "There would be some differences and difficulities in working with them (women) at first, but these would be expected to disappear after a short while. Some adjustment would be required."

The problem of adjustment to new working conditions, etc., brought about by the presence of women engineers seem minimal, if present at all. Maladjustment would clearly be the exception rather than the rule.

Dennis Cotton, a general business major in his freshman year, speaks for practically all students when he states, concerning the general idea of women in engineering, "It's fine with me, as far as I care."

That seems to be the way we all feel.

The Ole Miss School of Engineering has just been blessed with one of these fine individuals, namely a lady professor. And it appears that she will be welcomed with congeniality and ease. Prejudices toward women engineers in general and specifically our lady prof., will be almost non-existent.

Can women engineers fit into the traditional role of an engineer? Well, one can be sure of this: They will "fit in" just as easily as their role in the field is accepted. Some modifications of the "traditional" role of an engineer will come as a result of their entry into the field, but the end result will be a concept of engineers and their profession with whole new possibilities, new thoughts — new creativity. Perhaps this alternative will bring about better things. In a time when engineers are at a shortage — when demand for qualified individuals with a knowledge of engineering concepts and a knack for practical, perceptive and creative design is at its height — the women in engineering will find infinite horizons for advancement; and may, in the long run, improve the lot of their male colleagues by benefit of their ideas.

EE PROFESSOR LECTURES IN SHORT COURSE

Dr. Donald R. Wilton, Professor of Electrical Engineering, was recently invited to lecture in a five-day short course on Numerical and Asymptotic Techniques for Electromagnetics and Antennas. This short course was presented at the Syracuse University Conference Center at Blue Mountain Lake, New York on September 17-21, 1979, and course coverage provided up-to-date survey of problems related to wire antennas, solid surface scatterers, transient scattering, coupling, high frequency diffraction, and other related subjects. Dr. Wilton has been a pioneer in establishing matrix methods for solving electromagnetics problems, and he has published extensively on numerical methods as applied to antennas and scattering.

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—Linda Land BS, Mechanical Engineering

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Engineering Alumni Chapter News

David Arnold, (right) President of the Engineering Alumni Chapter, presents a plaque to Henry C. Brevard, Jr., in appreciation for his leadership and service while serving as president of the Chapter during 1977-1979.

ENGINEERING ALUMNI CHAPTER OFFICERS ELECTED

At the spring meeting of the Engineering Alumni Chapter, the Chapter's membership elected Dr. David W. Arnold of Yazoo City and James D. Quin of Jackson to the offices of president and vice president respectively.

Prior to his election to the office of president, David Arnold served for two years as vice president of the Chapter and chairman of the important Finance Committee.

David received his B.S. degree in chemical engineering from Ole Miss and his M.S. and Ph.D. degrees in chemical engineering from Iowa State University. In addition he is a graduate of the Mid-South Executive Development Program at Louisiana State University.

David is married to the former Barbara Daves of Greenwood, and they have one daughter, Janet, who is a sophomore at Ole Miss.

David joined Mississippi Chemical Corporation in 1966 and has served as a process study engineer, chief process and process study engineer, manager of process design and study engineering, director of engineering, and now serves as vice president of Mississippi Chemical Corporation's engineering division.

Jim Quin, a native of McComb, will serve as vice president and chairman of the Chapter's Finance Committee for a two-year term of office.

Jim was graduated from Ole Miss in 1958 with a B.S. degree in civil engineering.

Jim is married to the former Alice Bickham and they have three children; Kathy, Buba, and Molly who is a student at Ole Miss.

In June of 1958, Jim began his work with the Mississippi State Highway Department. He has served as assistant project engineer, maintenance superintendant, assistant district maintenance engineer, district maintenance engineer and district engineer. He now serves as chief engineer for the State Highway Department.

ENGINEERING ALUMNI CHAPTER FALL MEETING

The Engineering Alumni Chapter will hold its annual fall meeting on Friday, November 16, 1979, at LeFleur's Restaurant in Jackson, Mississippi. The activities will begin with a social hour at 6:30 p.m. followed by a buffet dinner and program.

Dr. John W. Prados, an Ole Miss alumnus and Vice President for Academic Affairs at The University of Tennessee, will be the featured speaker for the evening. Dr. Prados received his B.S. degree in chemical engineering from Ole Miss in 1951 and his M.S. and Ph.D. degrees in chemical engineering from The University of Tennessee.

All Ole Miss engineering alumni and their guests are invited to attend. Additional information and preregistration materials will be mailed out well in advance of the meeting. Reservations may be made with Herb Dewees, engineering alumni secretary, Alumni Office, University of Mississippi, 38677, or 601-232-7251.

WOODS ORDER RECOGNITION

The Woods Order is an organization established by the Engineering Alumni Chapter of The University of Mississippi Alumni Association in cooperation with The Universtiy of Mississippi Foundation. Named in memory of Jesse Brooks Woods, Jr., an outstanding graduate of the School of Engineering, the Order will administer substantial gifts for the benefit of the School of Engineering to encourage its recognition as one of the outstanding engineering education centers in the United States.

Membership in the Woods Order is open to an engineering alumna or alumnus, a friend, an organization, a family, or other entity dedicated to the well-being of the School of Engineering. Generally, membership may be achieved by a minimum current gift of $5,000, payable over a period not to exceed ten (10) years,

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Dr. David W. Arnold, President

or a planned gift of $10,000 through a bequest, a trust, or a life insurance program. Because each donor has a different situation which demands different considerations, there are many ways of participation.

We salute those extraordinary participants who have become our first charter members as of this printing. Their generous support and special loyalty are most appreciated!

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E. M. Best
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B & B Concrete Co., Inc.
Henry C. Brevard, Jr.

Mr. James D. Quin, Vice President

Outstanding Engineering Teacher For 1978-1979 Named

Henry C. Brevard, Jr., (left) immediate past president, presents the Outstanding Engineering Teacher of the Year Award for 1978-1979 to Dr. Darko Kajkez.

Dr. Darko Kajfez, professor of electrical engineering and research engineer at Ole Miss, was named Outstanding Engineering Teacher of the Year at the spring meeting of the Engineering Alumni Chapter.

The award is based on research, publication, quality of teaching, and service to the community and University. Selection for the award originated from nominations by fellow professors in each of the six departments in the engineering school and involved student and alumni evaluations of the nominees. A committee of previous award winners made the final selection.

A framed resolution and a $1,000 award from the Engineering Alumni Chapter goes to the recipient.

Dr. Kajfez received an electrical engineer's degree from the University of Ljubljana, Yugoslavia, in 1953 and a Ph.D. degree in engineering from the University of California, Berkeley, in 1967.

Prior to coming to Ole Miss in 1967, Dr. Kajfez was: research engineer, Institute of Telecommunications, Ljubljana, Yugoslavia; head of the design department, Factory "Rudi Cajavec," Banja, Luka, Yugoslavia, scientific associate, Institute for Automation, Ljubljana, Yugoslavia, research assistant, Electronics Research Laboratory, University of California, Berkeley; and development engineer, Scala Radio Company, San Leandro, California.

Dr. Kajfez, a native of Delnice, Yugoslavia, has published papers extensively in numerous professional journals and has presented numerous papers throughout the United States and abroad.